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Dental Hygiene (DNTL) 2020 Local Anesthesia and Nitrous Oxide (2 Units) CSU  
[formerly Dental Hygiene 20]

Prerequisite: Successful completion of all first semester Dental Hygiene Program courses and Chemistry 2108 and 2109 with a “C” or higher

Prerequisite knowledge/skills:

Before entering the course the student should be able to:

1. demonstrate the nature and use of organic compounds,
2. write nomenclature of the large number of organic compounds,
3. demonstrate solutions to problems of synthesis analysis of simple organic compounds,
4. provide examples in the use of organic compounds to industry and the welfare of people in general,
5. demonstrate the nature and concepts of metabolic pathways, and
6. demonstrate skills and practices in the organic laboratory such as identification of organic compounds by physical and chemical properties; and the testing for functional groups.

Total Hours: 16 hours lecture; 48 hours lab (64 hours total)

Catalog Description: This course emphasizes pharmacology and physiology of local anesthetic agents and their proper use, the anatomy of the trigeminal nerve, physiology of nerve conduction and how anesthesia works and the prevention and management of emergencies.

Type of Class/Course: Degree Credit

Text: Stanley F. Malamed, D.D.S. *Handbook of Local Anesthesia*. 6<sup>th</sup> ed. St. Louis: CV Mosby, 2013.  
Print.

Additional Instructional Materials: Stanley F. Malamed, D.D.S. *Medical Emergencies in the Dental Office*.  
2<sup>nd</sup> ed. St. Louis: CV Mosby, 1982.

Course Objectives:

By the end of the course, a successful student will be able to:

1. explain the pharmacology, physiology, and proper use of local anesthetic agents,
2. analyze the anatomy of the trigeminal nerve, physiology of nerve, conduction and how anesthesia works,
3. explain the armamentarium for local anesthesia injections,
4. demonstrate techniques used in anesthesia injections dentistry,
5. explain procedures for the prevention of emergencies,
6. demonstrate competency in the management of medical and dental emergencies, and
7. demonstrate competency in the management and application of nitrous oxide.

Course Scope and Content:

Unit I	Physiology and Psychology of Pain
Unit II	Anesthetic Agents Used in Dentistry
Unit III	Neurophysiology of the Trigeminal Nerve
Unit IV	Armamentarium Necessary for Administration of Local Anesthetic Agents
Unit V	Emergency Drug Kit and Use of Drugs Therein
Unit VI	Respiratory and Cardiovascular Distress
Unit VII	Allergies
Unit VIII	Drug Related Emergencies
Unit IX	Nitrous Oxide Armamentarium
Unit X	Administration of Nitrous Oxide TECHNIQUES

Didactic, laboratory and clinical experience designed to achieve goals and objectives:

1. Role playing of emergency situations
2. Demonstrations of various injection techniques
3. Formal lectures
4. Perform designated injections on partners
5. Apply proper nitrous oxide procedures on partners

Learning Activities Required Outside of Class:

The students in this class will spend a minimum of 2 hours per week outside of the regular class time doing the following:

Independent reading and study

Methods of Instruction:

1. Lecture
2. Class discussions
3. Audio-visual presentations
4. Student participation in practical demonstrations
5. Student participation in practical application of local anesthetics and nitrous oxide

Methods of Evaluation:

1. Substantial writing assignments, including:
  - a. essay exam(s)
  - b. reading report(s)
2. Other examinations and quizzes, including:
  - a. multiple choice items

- b. matching items
- c. true/false items
- 3. Evaluation of "mock" emergencies in clinic
- 4. Evaluation of injection technique
- 5. Evaluation of nitrous oxide application